**EDUC 272 - Methods in Secondary Chemistry**

**January Task (10 marks for 4% of the course)**

**SECTION I General Introduction to January, February, and March Tasks**

Welcome to your first task for EDUC 272! I’m Chris Campbell and I am very happy and excited to be working with you on one of your final courses in this program. If you would like to see a personal introduction from me, please go to our group’s WhatsApp account (EDUC 272 Dadaab) and view my introductory video. Also, please introduce yourself to me as soon as you can in a short video!

This document gives an overview of the three tasks you will do online before we meet in April. It explains how to do the first task (**January Task**). Any time you are not sure about what to do in these tasks or on the course, please ask your fellow teacher candidates or send me a message on WhatsApp (EDUC 272 Dadaab) or through the EDUC 272 blog (<http://blogs.ubc.ca/dadaab/>).

It is very important that you do three tasks – one every month - before we meet in Dadaab in April. The reason is that we would like you to learn as much as possible before your program ends and to successfully pass this course. In these three tasks, you will:

1. Think about lab work, your teaching context, and a select a lab (**January Task**);
2. Plan a lab (**February Task**); and
3. Do and film the lab (**March Task**).

Your classmates will also be doing these tasks, so you can make this a valuable experience for yourself and other teachers in the course by working hard on them.

Doing the task is also a good learning opportunity for everyone because people learn best by doing something. As Edgar Dale said:

People general remember:

 10% of what they read,

 20% of what they hear,

 30% of what they see,

 50% of what they see and hear,

 70% of what they say or write, and

 90% of what they do.

So, the more we get students saying, writing, and doing, the more they will learn!

**SECTION II January Task Information and Instructions**

In this section we identify the learning outcome of this task; give a summary of the task and specific actions you need to do to complete the task; and show how the task will be assessed. Section III will then provide the questions you will answer, copy, paste, and post on the EDUC 272 blog.

**January Task – Learning Outcome**

By doing this task, you will improve your ability to **select and adapt methods, materials, and resources available in the educational context to support meaningful chemistry learning**. This learning outcome appears in the **EDUC 272 Course Outline** with other course learning outcomes.

**Summary and Actions Required of January Task**

In this task, you will read **Handout 1.1 – Primer on labs** and think about: the purpose of laboratory experiments in chemistry, reporting on experiments, and the equipment and resources that you have at your school. Then, you will skim read (i.e., quickly to get main ideas) **LAB 1** to **LAB 20** and select four laboratory experiments you can do with your students in March. I am asking you to choose four, but you will only plan one laboratory experiment in the **February Task**.

Then you will use **January Task (SECTION III)** to write about your laboratory experiences and resources and your ideas about learning in laboratories. You will also use this handout to evaluate four labs and select one to do in March. To select a lab, you need think about the required equipment and materials; the focus on the Kenyan curriculum; making the lab meaningful for students; and the activity you and your students will engage in. Then, you will send me your answers in the blog and *tell me* which lab you chose.

So, please complete the following actions **on or before January 24, 2015 at midnight Kenyan time**:

1. Read this **January Task** document.
2. Read **Handout 1.1 - Primer on labs** and look at **LAB 1** to **LAB 20**.
3. Read the questions in **January Task (SECTION III)** carefully and answer them.
4. When you finish answering the questions, copy all words from **January Task (SECTION III)** and paste them into to the January page of the EDUC 272 blog: <http://blogs.ubc.ca/dadaab/>.
5. Send me a message on Whatsapp: EDUC 272 Dadaab to tell me that you finished the task.

Again, any time you are not sure about what to do in these tasks or on the course, please ask your fellow teacher candidates or send me a message on WhatsApp (EDUC 272 Dadaab) or through the EDUC 272 blog (<http://blogs.ubc.ca/dadaab/>).

**Assessment of the January Task**

This task will be marked out of 10. The marks for each question will appear in **SECTION III** in brackets (.5 points, for example). You can get up to 4% for completing this **January Task**.

So, let’s do some work! Please answer the questions that follow on pages 3 to 7.

**SECTION III Questions**

Please read and answer to the following questions on a computer. Then, get on the Internet and open up the EDUC 272 course blog (<http://blogs.ubc.ca/dadaab/>) to the January page. Copy the words below and paste them into a comment box (i.e., below where it says **Leave a Reply**), add your name and email in the spaces, and then post your comment.

**……….copy and paste words below this line………**

**January Task – Answers**

**READING: Handout 1.1 – Primer on labs**

**Question 1**

What is your name?

**Question 2**

How many chemistry laboratory experiments or demonstrations have you done as a teacher?

**Question 3 (0.5 marks)**

What was the most meaningful chemistry laboratory or demonstration that you did as a teacher? Why?

What was the most challenging chemistry laboratory or demonstration that you did as a teacher? Why?

**Question 4**

Read pages 1 and 2 until the heading **Laboratory Reports (Handout 1.1 – Primer on labs)** and answer the questions that follow. These pages are from a laboratory text called *Heath Chemistry*.

**Question 4.1 (1 mark)**

On page 1, in paragraph 3 this writer says: “Rather than using laboratory work to supplement study in the text, the text is used as an important source of information to supplement the scientific investigation that centers around the laboratory.”

Consider these two approaches to teaching and learning chemistry: (i) Using lab work to study the text; (ii) Using the text to study scientific investigation in labs. Which teaching approach do you think is best? Which approach are you familiar with in your own learning and teaching of chemistry? Explain in 4-5 sentences.

**Question 4.2 (1 mark)**

Page 1 recommends carrying out experiments in three phases: pre-lab session, laboratory work, and post-lab session. In 4-5 sentences, summarize why they recommend this.

**Question 5 (1 mark)**

Read the **Laboratory Reports** section on pages 1 and 2 of **Handout 1.1 – Primer on labs**. These ideas for getting students to report laboratory results without doing a traditional lab report. Choose one idea that you would like to try and write it below. Then state in 1-2 sentences why you would like to try it.

**Question 6 (1 mark)**

Look at the **Common Laboratory Equipment** in page 4 of **Handout 1.1 – Primer on labs**. If you have any of the equipment in the picture at your school **or** you can find, make, or adapt something to fit the same purpose, list it below.

**Question 7 (1 mark)**

List below the chemicals that you can find at your school or that you can get from other sources.

**Question 8 (1 mark)**

List other things that you have or do not have that might affect your ability to have students do laboratory work (e.g., no source of natural gas for lab, lack of key chemicals, no fume hoods or safety features).

**READING: LAB 1 to LAB 20**

**Question 1 (0.5 marks)**

Look through the first ten labs (**LAB 1** to **LAB 10**) that are on the January page of the EDUC 272 course blog (<http://blogs.ubc.ca/dadaab/>). Select two that are interesting to you that you might like to plan and do in February and March. Identify these below:

Choice 1:

Choice 2:

**Question 2 (0.5 marks)**

Look through the next ten labs (**LAB 11** to **LAB 20**) that are on the January page of the EDUC 272 course blog (<http://blogs.ubc.ca/dadaab/>). Select two that are interesting to you that you might like to plan and do in February and March. Identify these below:

Choice 3:

Choice 4:

**Question 3**

Evaluate these four labs for the following statements, giving each choice 1 to 5 points. For example, giving 5 points means that the lab you chose meets the statement very well. Giving 1 point means you think the lab you chose meets the statement very poorly.

**Statement 3.1 (0.5 marks)**

I can do this lab with the chemicals, equipment, facilities, and resources I have at my school.

Choice 1:

Choice 2:

Choice 3:

Choice 4:

**Statement 3.2 (0.5 marks)**

I can use this lab for learning that is connected to the Kenyan Chemistry Curriculum (Forms 2, 3, or 4).

Choice 1:

Choice 2:

Choice 3:

Choice 4:

**Statement 3.3 (0.5 marks)**

I can use this lab in my class to make students interested in the topic (T), to demonstrate chemistry content from the curriculum while the watch (C), to encourage students to investigate or inquire about a problem or question (I), or to get students doing hands-on work (H). (**Note:** You can answer below using many letters –for example: Choice 1: T, C, H)

Choice 1:

Choice 2:

Choice 3:

Choice 4:

**Statement 3.4 (0.5 marks)**

I can name three instructional strategies you could use with each lab. List them below. (Note: Do you remember instructional strategies from previous courses? I have listed some below.)

Choice 1:

Choice 2:

Choice 3:

Choice 4:

**Instructional strategies**

Observing students, questioning, giving feedback, explaining, giving guided practice, giving independent practice, coaching, tutoring one-to-one, eliciting, thinking inductively, students tutoring students, relying on previous knowledge….

**Statement 3.5 (0.5 marks)**

Using this lab will lead to meaningful and active learning for my students. Give a reason for your answer, making sure that you identify the learning you would like them to get out of it.

Choice 1:

Choice 2:

Choice 3:

Choice 4:

**Question 4**

Which of these four labs do you want to try in your class? Write the name of the lab below.